

ABSTRACT

A system for sensing chemical and biological warfare agents and/or delivering an antidote from an inventory of multiple drugs contained in the system is provided. This system is capable of detecting the type and amount of used chemical agents, selection of an appropriate antidote combination from multiple reservoirs, preparation and mixing the antidote and delivery of custom-mixed antidotes with high accuracy. Micromachined devices (also known as microelectromechanical systems, MEMS) can be used to fabricate one or more of the system elements such as the pump, sensors, drug metering system and injection device. The advantage of using MEMS is that it allows devices that are small, low power, rugged, biocompatible, and low cost at high volume. The system is portable and can be used for armed forces, social service providers (for example, fire fighters, police, FBI, etc.), or civilians as an effective means for protection against chemical or biological attacks.